UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,970	07/25/2006	Atsushi Matsumoto	009289-06168	5410

52989 7590 09/15/2010

Dickinson Wright PLLC
James E. Ledbetter, Esq.
International Square
1875 Eye Street, N.W., Suite 1200
Washington, DC 20006

EXAMINER	
JAMA, ISAAK R	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
09/15/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,970	MATSUMOTO ET AL.	
	Examiner	Art Unit	
	ISAAK R. JAMA	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *1-14,17-21,26 and 28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-16, 22-25, 27 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 5, lines 7-22, filed 07/12/2010, with respect to claims 15, 16, 19, 22-25, 27 and 29 have been fully considered and are persuasive. The rejection of claims 15, 16, 19, 22-25, 27 and 29 has been withdrawn.

Status Of claims

2. Claims 15, 16, 22-25, 27 and 29 are pending in the Application.

3. 1-14, 17-21, 26 and 28 are cancelled

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 15, 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication Number 2004/0233838 (Sudo et al.) in view of U.S. Patent Number 7,206,350 (Korobkov et al.)

4. Regarding claims 15 and 29, Sudo teaches a base station apparatus **[Figure 33, # 280]** comprising: an acquisition section that acquires from a communication terminal apparatus **[Figure 33, Selection elements 251 and 252]**, frequency band information

indicating a frequency band having a propagation path state that is equal to or better than a predetermined level among a plurality of frequency bands **[Figure 33, S10]**; into which a frequency band used for a transmission multi-carrier signal is divided and which are known to both a base station apparatus and a reception apparatus **[Figure 1, i.e. OFDM sub-carriers]**; and a transmitting section that transmits a signal to the communication terminal apparatus via the frequency band indicated by the frequency band information **[Figure 33, # 280]**. But Sudo fails to teach a base station apparatus wherein the transmitting section instructs each communication terminal on the repetition number of the frequency band information in accordance with the number of the accommodated communication terminals. Korobkov teaches an OFDM multiple sub-channel communication system **[Title]**, whereby an upconversion structure permits an OFDM transmitter to generate multiple sub-channels in a dynamic fashion so the frequency position and frequency width of the sub-channels can quickly change from one time instant to the next (i.e. informing the users of the position and width of the sub-channel) **[Column 7, lines 18-22]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the method of Korobkov in the system of Sudo in order enable a wireless terminal to quickly and efficiently search and find the carrier frequency or frequencies and/or the frequency band to be used for communications purposes with the base station.

5. Regarding claim 16, Sudo further teaches a base station apparatus wherein the acquisition section comprises: an identifying section that identifies the frequency band through which a signal is transmitted from the communication terminal apparatus; and a

judging section that judges the identified frequency band is the frequency band having the propagation path state that is equal to or better than the predetermined level **[Figure 33, # 261 i.e. Size comparison section 261 compares absolute value |AD-BC| with threshold value 1, and reports the comparison result as decision signal S10 to selection sections 251 and 252 of transmitting system 250 of the OFDM communication apparatus]**.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sudo and Korobkov above as it applies to claim 17, in view of U.S. Patent Application Publication Number 2004/0235485 (Tanaka).

15. Regarding claim 19, Sudo and Korobkov teach the limitations of claim 17, above. In addition, Sudo teaches a transmission apparatus wherein the reporting section transmits the report signal **[Figure 33, #'s 251 & 252; i.e. frequency selection sections that receive a propagation path determination signal S10]**. But Sudo and Korobkov do not specifically teach that the frequency band assigned to a communication terminal apparatus is updated. Tanaka teaches a wireless LAN system and channel allocation method wherein the main frequency of the frequency band used by the wireless communication system is being updated **[Page 10, claim 16]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the method of Tanaka in the combined systems of Sudo and Korobkov in order to accommodate new users.

16. Claims 22- 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sudo and Korobkov above as it applies to claim 15, in view of U.S. Patent Number 7,020,110 (Walton et al.).

17. Regarding claims 22, 23 and 25, Sudo and Korobkov teach the limitations of claim 15 above. In addition, Sudo teaches a base station apparatus wherein the acquisition section acquires a priority of the propagation path state of the frequency band in addition to the frequency band information from each of the plurality of communication terminal apparatuses **[Page 26, paragraph 0390]**. But Sudo and Korobkov do not specifically teach that the transmitting section determines a frequency band to assign to a signal for each communication terminal apparatus based on the frequency band information and the priority of the propagation path state of the frequency band. Walton teaches a resource allocation for MIMO-OFDM communication systems where each frequency sub-channel is assigned to a set of high priority terminals **[Figure 4, columns 19 & 20, lines 66-67 and 1-30)]**. In addition, Walton teaches that the channel state information (CSI) received from the receivers may be used to achieve high throughput by assigning a proper set of one or more terminals to the available transmission channels such that they are allowed to communicate simultaneously with the base station **[Column 10, lines 11-15]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the resource allocation of Walton in the combined system of Sudo and Korobkov in order to improve the performance of the communication system.

18. Regarding claim 24, Walton further teaches a base station apparatus wherein the transmitting section transmits a report signal via the determined frequency band **[Figure 2, steps 214-236]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the resource allocation of Walton in the combined system of Sudo and Korobkov in order to maximize the performance of the resource allocation process.

19. Regarding claim 27, Walton further teaches a base station apparatus wherein the acquisition section performs the acquiring when updating the frequency band assigned to the communication terminal apparatuses **[Figure 2, steps 216-230]**. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the resource allocation of Walton in the combined system of Sudo and Korobkov in order to maximize system performance.

Conclusion

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ISAAK R. JAMA whose telephone number is (571)270-5887. The examiner can normally be reached on Monday-Thursday; 4-10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IRJ/

/LESTER KINCAID/

Supervisory Patent Examiner, Art Unit 2617